



Kirkland Signature Clean Power Gasoline Additive



National Tanks Conferen

Denver, CO

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Costco Gasoline Philosophy



1. Obey the law

2. Be safe, clean, and reliable

3. Sell high quality fuel

4. Never be undersold

5. Protect the environment

6. Provide courteous assistance



Costco Gasoline with Kirkland Signature

CLEAN

POWER

- Costco has added tanks and piping at most of our gas stations, to increase the amount of detergent additive in our gasoline.
- **Kirkland Signature Clean Power** detergent additive is registered with the EPA.
- Engine testing shows that more detergent is needed to keep modern engines clean.
- Clean Power is five times the EPA-required additive in both regular and premium grades.
- We want to offer this higher-value product to remain true to our overall business philosophy.



Clean Power Benefits

- Minimizes intake valve deposits
- Keeps fuel injectors clean
- Cleans up existing deposits
- Small incremental improvements

times many cars

times many miles

= significant impact on emissions and fuel economy.

KIRKLAND
Signature

Costco Gasoline with Kirkland Signature

CLEAN
POWER

Gasoline Detergent Additive

- Five times EPA detergent requirement
- Included in both regular and premium grades
- Cleans fuel injectors and intake valves
- Improves performance
- Reduces emissions caused by dirty engines

Now available at this location.

COSTCO
GASOLINE



Cleaner is better!



Intake valves



Fuel injectors



Costco Gasoline Nationwide



372 U.S. Costco fuel facilities

296 Clean Power installations

We'll finish our rollout in California in 2014

Find them at costco.com



UST vs. AST

- Most of Costco's additive tanks are 1500 gallon fiberglass chemical USTs manufactured by Containment Solutions.
- 46 locations have 1200 gallon AST tanks.
- Both tank systems feed identical underground additive piping and control systems.
- All tanks are double walled and continuously monitored.





Automated Injection System

- Customized control unit manages the system:
 - Additive turbine and meter in the additive tank sump.
 - Solenoid valves in each gasoline tank fill sump.
- Attendant keys total fuel gallons immediately prior to each delivery.
- Additive automatically injected at a programmable treat rate.
- Additive is mixed with the fuel by the delivery agitation.





Equipment List

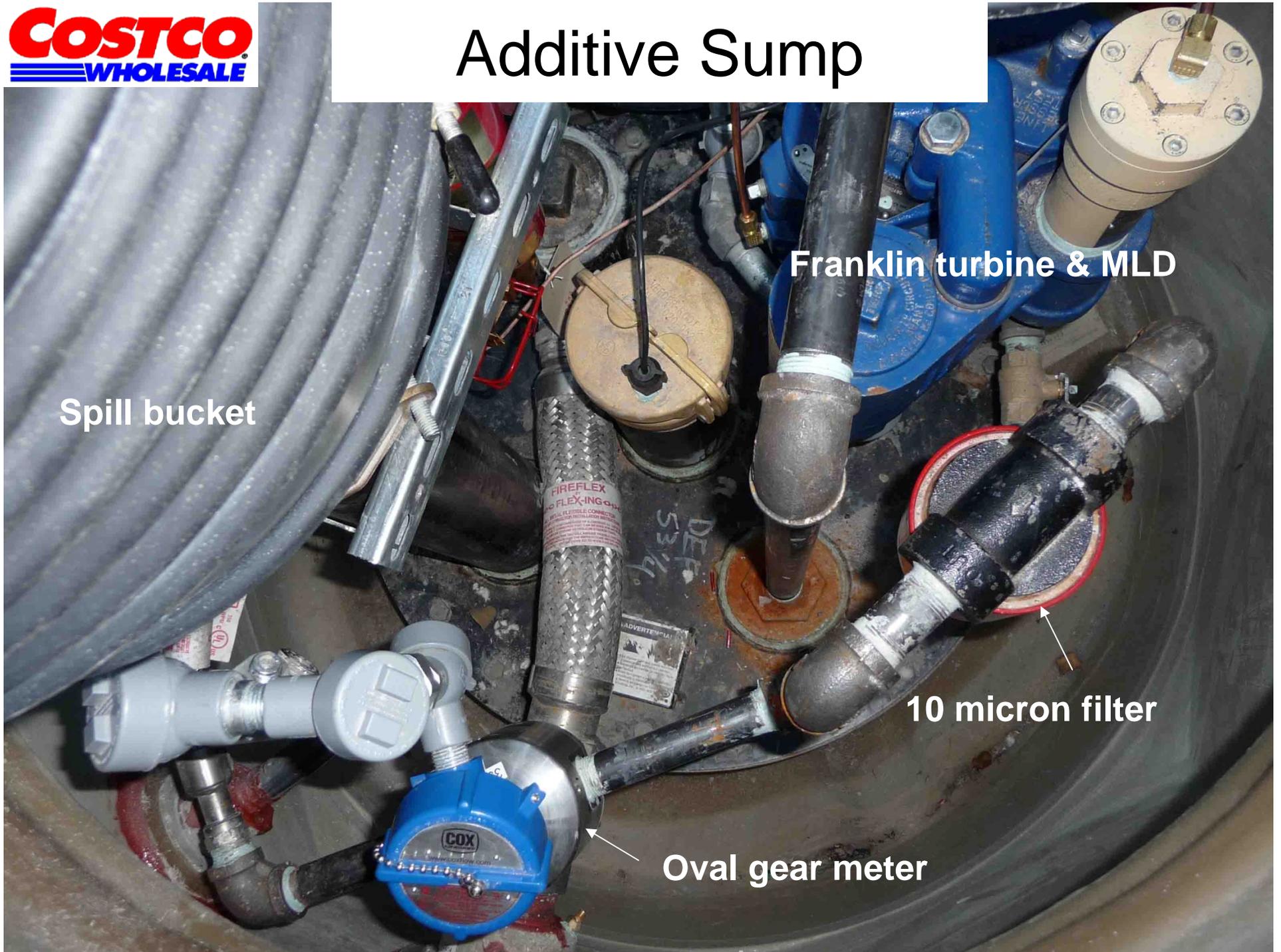
- 1500 gallon Containment Solutions DW UST
- Ameron Dualoy 3000L FRP piping
- ¾ hp FE Petro turbine
- OPW 61fStop Overfill drop tube
- Franklin STP-MLD-D diesel mechanical leak detector
- ASCO solenoid valve.
- Badger oval-gear meter
- Cox Flow Measurement batch controller console



Equipment Compatibility

- Equipment manufacturers confirmed compatibility of Clean Power additive with all equipment used for storage, piping, and leak detection.
- Independent verification that monitoring equipment works with 100% Clean Power additive.
 - Franklin STP-MLD-D leak detector (added to California LG 113)
 - Veeder-Root sensors
 - Tested by Ken Wilcox and Assoc.
- System complies with California's June 2012 regulation change to Title 23, CCR Section 2631.
- ASCO solenoid valves are identical to those currently used to dispense additive at many rack terminals.

Additive Sump



Spill bucket

Franklin turbine & MLD

10 micron filter

Oval gear meter

Fuel Tank Fill Sumps



ASCO solenoid valve

OPW Remote fill riser T



Additive UST Install



Additive Piping Installation



Wenatchee, WA



Tank Field At New Sites



Additive tank



Additive Delivery

- AST-style overfill prevention used on all tanks due to pump delivery.
- No ball floats





Monitoring

- Continuous additive tank monitoring via existing Veeder-Root TLS-350 consoles.
- VR liquid sensors in additive tank sump, vent transition sump, and gasoline fill sumps.
- All Costco stations monitored 24/7 by Gilbarco/Veeder-Root's Fuel Monitoring Service (FMS).
- Automatic service dispatch in response to VR alarms.





Summary

- Clean Power system has worked well since 2010
- Sophisticated reporting confirms that every delivery is properly additized.
- We can do this because we have fantastic, well-trained employees!

